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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/508,758 | 05/30/2000 | ANDREW FREDERICK MYLES | SPR4388P0110US | 8353 |

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EXAMINER

HOANG, THAI D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2667

DATE MAILED: 09/26/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

[Handwritten signature]

Office Action Summary

Application No.

09/508,758

Applicant(s)

MYLES ET AL.

Examiner

Thai D Hoang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Application filed on 05/30/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,11-23,28-42,47-64,69-87 and 92-102 is/are rejected.
- 7) ☒ Claim(s) 7-10,24-27,43-46,65-68,81 and 88 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-18, 33-35, 53-57, 75-80 and 98-102 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 16, 33, 53, 75 and 98, the statement "each said channel comprises a plurality of slots and each slot comprises a data unit of varying length, and wherein each channel has either hub-to-mobile slots or mobile-to-hub slots" is confusing. Accordingly, the claims recite "each channel has either hub-to-mobile slots or mobile-to-hub slots", and "each slot comprises a data unit of varying length". However, figures 6-9 and tables 1A and 1B on pages 12-13 of the specification indicate that both data units (hub to station and station to hub) are different length but their sizes are fixed. It is not clear what is meant by "each said channel comprises a plurality of slots and each slot comprises a data unit of varying length, and wherein each channel has either hub-to-mobile slots or mobile-to-hub slots".

Claims 17-18, 34-35, 54-57, 76-80 and 99-102 are rejected because they depend on rejected claims or they have the same problem as shown above.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2.1 Claims 1-6, 11, 13-15, 19-23, 28, 30-32, 36-42, 47, 49-51, 58-64, 69, 71-73, 81-87, 92 and 94-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayrand et al, US patent No. 5,504,939 in view of Wang, US patent No. 5,280,630, hereafter referred to as Mayrand and Wang respectively.

Regarding claims 1, 3, 19, 36, 39, 58, 61, 81 and 84, Mayrand discloses a method of communication channel selection in cellular radio communication systems. Mayrand teaches that the system comprises a Mobile Switching Center MSC (hub), which communicates with a plurality of base stations B1-B9 over a radio medium (fig. 1). In figures 3 and 6, Mayrand shows a procedure for allocating a communication channel, in which communication channel seizure requests are processed by the system following internal generation thereof by an MSC during its handling of traffic with a mobile station. At step 21 the MSC receives a request from the station, a voice channel is selected (reserved state) from a pool of available channels 24 (empty state), then the MSC assigns the selected channel for the station (owner-state); col. 6, lines 21-53; col. 8, lines 39-60 (each channel being varying in one of an empty-state, a reserved-state, or an owner-state). Furthermore, Mayrand teaches that the MSC allocates communication channel for each station based on a characteristic of the call requested. Each communication channel request is assigned to a communication channel group based upon the call type determination thereof. Mayrand does not teach ~~as~~ that the method comprises the step of re-allocating the respective state and/or

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the number of channels over time on the basis of each station's data requirements. However, Wang discloses a method and apparatus for dynamic channel allocation. Wang teaches that the method allows borrowed channels being allocated for the base stations when no assigned channels for the base stations are available; abstract, col. 4, lines 39-42; col. 10, line 45 – col. 11, line 12. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the dynamic channel allocation method disclosed by Wang into Mayrand's system in order to utilize the bandwidth on each channel of the system.

Regarding claims 2, 20, 38, 60 and 83, the communication in the system disclosed by Mayrand is over a radio medium that inherently has a limit bandwidth because every system has a specific maximum bandwidth value to transmit and receive communication signal.

Regarding claims 4, 40, 62 and 85, the stations in the system disclosed by Mayrand could request the MSC allocate one or more channels at any time when a request is received from one of a plurality of mobile stations.

Regarding claims 5-6, 21, 23, 41-42, 63-64 and 86-87, Mayrand discloses that the MSC allocates communication channels for each of the plurality of base stations based on the request and characteristic of the calls received from the base station and available channels for each call type in the pool of channel 24. Then, the MSC selects appropriate channels to reserve and assign for the base station corresponding with the call types. Therefore, it indicates that Mayrand's system comprising the step of the station negotiating with the hub to be allocated a required number of channels in the

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reserved and owner-state; figs. 3 and 6; abstract; col. 2, line 28 – col. 3, line 13; col. 5, line 61 – col. 6, line 33 (the method comprises the further step, as management traffic, of a station negotiating with the hub to be allocated a required number of channels in the owner-state and reserved state.)

Regarding claims 11, 28, 47, 69 and 92, Mayrand teaches that the MSC operates based on the characteristics received from the based stations. One of the characteristics is a terminating signal; col. 6, lines 62-64; col. 11, lines 25-27. Therefore, it indicates that the system comprises the step of a station requesting the hub to be deregistered to give-up allocated channels.

Regarding claims 13, 30, 49, 71 and 94, Mayrand does not teach that the method comprises the step of re-allocating channels. However, Wang discloses a method and apparatus for dynamic channel allocation. Wang teaches that the method allows borrowed channels being allocated for the base stations when no assigned channels for the base stations are available; abstract, col. 4, lines 39-42; col. 10, line 45 – col. 11, line 12. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the dynamic channel allocation method disclosed by Wang into Mayrand's system in order to utilize the bandwidth on each channel of the system.

Regarding claims 14, 31, 50, 72 and 95, Mayrand does not teach that the method comprises the step of re-allocating channels. However, Wang discloses that if a channel is qualify for borrowing, the channel is add to a preferred channel list; fig. 13, step 350; fig. 14, step 388; col. 22, lines 6-19. if there is no reply for accepting is received, the base station will restart the process of channel assignment. It would have been obvious

to one of ordinary skill in the art at the time the invention was made to apply the dynamic channel allocation method disclosed by Wang into Mayrand's system in order to utilize the bandwidth on each channel of the system.

Regarding claims 15, 32, 51, 73 and 96, Mayrand does not teach that the method comprises the step of re-allocating channels. However, Wang teaches that the method comprises the step of free the borrow channel for the owning station; fig. 12, step 325-330; col. 15, lines 1-7. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the dynamic channel allocation method disclosed by Wang into Mayrand's system in order to utilize the bandwidth on each channel of the system.

Regarding claims 22, 37, 59 and 82, Mayrand discloses that the system is a wireless system; therefore, it implies that the communication is preformed over a radio medium; fig. 1.

2.2 Claims 12, 29, 48, 70 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayrand et al, US patent No. 5,504,939 in view of Wang, US patent No. 5,280,630, and further in view of Lindskog et al, US patent No. 6,363,267; hereafter referred to as Mayrand, Wang and Lindskog respectively.

Regarding claims 12, 29, 48, 70 and 93, both Mayrand, Wang do not disclose the system comprises the step of a station requesting the hub to delay any data communication to the station for a period of time to be in a sleep mode. However, Lindskog teaches that the mobile terminal can send a sleep request to an access point to delay transmission; col. 3, lines 61-66. It would have been obvious to one of ordinary

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skill in the art at the time the invention was made to adapt the method disclosed by Lindskog into the system disclosed Mayrand and Wang in order to reserve the bandwidth for other station access to the system while waiting for the delayed data.

2.3 Claims 16-18, 33-35, 52-57, 74-80 and 97-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mayrand et al, US patent No. 5,504,939 in view of Wang, US patent No. 5,280,630, and further in view of Albrow et al, US patent No. 6,061,340; hereafter referred to as Mayrand, Wang and Albrow respectively.

Regarding claims 16-17, 33-34, 52-56, 74-79 and 97-101, Mayrand does not clearly disclose the systems comprises limitations recited in claims listed above. Wang teaches that the system is operated based on Time Division Multiplexed (TDM) timeslots or Frequency Division Multiplexed (FDM) method; col. 1, lines 15-18. Therefore, it implies that each channel comprises a plurality of slots, wherein each slot comprises a data unit, and each channel comprises either uplink or downlink slots. Both Mayrand and Wang do not teach that the length of hub-to-mobile slots being arranged to be different from the length of the mobile-to-hub slots and the length of the slots being varied to account for different traffic conditions. However, Albrow discloses a method and system for transmission of digital data messages in digital telephony. Albrow teaches that the data in the uplink and downlink slots are different size according to the traffic condition; col. 3, lines 14-67. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the method disclosed by Albrow into the system disclosed Mayrand and Wang for the same advantages cited above with respect to claim 1.

Regarding claims 18, 35, 57, 80 and 102, Mayrand does not clearly disclose the systems comprises limitations recited in claims listed above. However, Wang discloses that the system dynamically allocates communication channel for each call requested corresponding the characteristic of the call. It indicates that if an assigned channel is not qualified for uplink or downlink, another channel is assigned. In addition, Wang discloses that the system is operated based on Time Division Multiplexed (TDM) timeslots or Frequency Division Multiplexed (FDM) method; col. 1, lines 15-18. It implies that each channel comprises a plurality of slots, wherein each slot comprises a data unit, and each channel comprises either uplink or downlink slots. Therefore, the system disclosed by Wang inherently comprises the step of replacing a mobile-to-hub slot with a hub-to-mobile slot to account for different traffic conditions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the method disclosed by Albrow into the system disclosed Mayrand and Wang for the same advantages cited above with respect to claim 1.

Allowable Subject Matter

Claims 7-10, 24-27, 43-46, 65-68 and 88-91 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art with respect to the application:

US patent No. 5,093,924 A, Toshiyuki et al disclose a channel assigning method in a mobile communication system.

US patent No. 5,390,366 A, Joseph et al disclose a system and method for providing priority access and channel assignment in a cellular telecommunication system.


US patent No. 5,574,977 A, Kasugai discloses a mobile communication system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D Hoang whose telephone number is (703) 305-3232. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Thai Hoang


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 9/24/03